MORNSUN®

INTEGRATED ISOLATED POWER RS485 TRANSCEIVER MODULE

-----TD301D485H(3.3V Power supply)
TD501D485H(5.0V Power supply)

FEATURES

- 2-way electrical isolation between input and output
- Integrated isolated DC/DC converter
- Bus protection
- Isolation voltage 2.5KVDC
- Operating temperature range:-40℃ ~ +85℃
- High speed data rate：115200bps
- Connect up to 32 nodes on one bus
- Low electromagnetic radiation
- High electromagnetic immunity

PART NUMBER SYSTEM

TD501D485H

- Rate
- Port signal type
- Package type
- Channel number
- Power distrubution output
- Power input
- Digital bus interface product type

GENERAL DESCRIPTION

TD_D485H are transceiver modules that fully integrated with power isolation, electronic isolation, RS485 interface and bus protective, which make RS485 connection easier for embedded equipment.

Mornsun TD_D485H help to simplify the existing design which needs one insolated DC-DC converter, Optical isolator with 3 channels and RS485 transceiver.

SELECTION GUIDE

Model Number	Power Input
TD301D485H	3.17V~3.45V
TD501D485H	4.75V~5.25V

ELECTRICAL CHARACTERISTICS

Power Input Parameters	Input Current(no Load)	≤35mA
	Send current	≤70mA
Input Parameters	Serial interface	Compatible with + 5 V and + 3.3 V UART Interface
	Pin current	I_{TXD}<2mA；I_{RXD}<2mA；I_{CON}<5mA
Output Parameters	485 Bus interface	Standard interface RS485,A 4.7KΩ pullup to Vcc, B 4.7KΩ pulldown to GND

TRANSMISSION CHARACTERISTICS

Transmission Rate	Maximum 115200 bps					
Data Delay	The delay time from the receiving data switch to the send data : 30 μs(min), 100 μs(max).					
The Number of Nodes	Connect up to 32 nodes on one bus					
Truth Table	Sending Status	Control	Input	Output		
		CON	TXD	A	B	Line state
		0	1	1	0	Normal
		0	0	0	1	Normal
	Receiving Status	Control	Input	Output		
		CON	A-B	RXD		
		1	0.2V	1		
		1	-0.2V	0		

ISOLATION CHARACTERISTICS

Galvanic Isolation	2-way isolation(Between input and output)
Isolation Voltage	2.5KVDC(Tested for 1minute and leakage current < 5mA, humidity <95%)

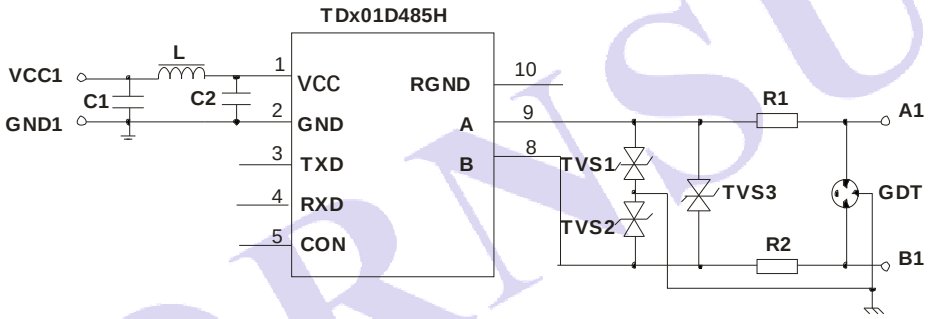
EMC CHARACTERISTICS

EMI	CE	CISPR22/EN55022 CLASS A（External Circuit Refer to Figure1）	
	RE	CISPR22/EN55022 CLASS A	
EMS	ESD	IEC/EN61000-4-2 Contact ±4KV	perf. Criteria B
	RS	IEC/EN61000-4-3 10V/m	perf. Criteria A
	EFT	IEC/EN61000-4-4 Power Port ±2KV	perf. Criteria B
		IEC/EN61000-4-4 Signal Port ±1KV	perf. Criteria B（External Circuit Refer to Figure1）
	Surge	IEC/EN61000-4-5 Signal Port ±4KV/±6KV	perf. Criteria B（External Circuit Refer to Figure1）
	CS	IEC/EN61000-4-6 3 Vr.m.s	perf. Criteria A

OTHER CHARACTERISTICS

Ambient Temperature	Operating temperature：-40℃～+85℃
	Transport and Storage temperature:-50℃～+105℃
Size	19.9*16.9*7.05 (Unit: mm)
Weight	Approx. 4 g
Application Environment	No dust, fierce shocking, impulsion and corrosive gas

EMC RECOMMENDED CIRCUIT



(Figure1)

Items	CE		Surge, EFT			
Component	L	C1, C2	TVS3	TVS1, TVS2	GDT	R1, R2
Recommended Parameters	10μH	105K 50V	SMBJ6.5CA	SMBJ12CA	B3D090L-C	wirewound 10Ω/2W

APPLICATION NOTICE

Please read the user manual carefully before using. If any question please contact our technical support department.

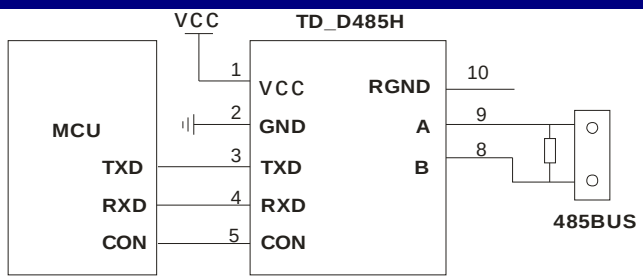
AFTER-SALES SERVICE

1. Products are carefully inspected and quality control during production and before shipment. If they operated abnormally or there were anything wrong, please contact our agent where purchased or MORNSUN FAE as soon as possible.
2. MORNSUN warranty our product for 3 years from manufacturing date. During this peroid, MORNSUN will repair or replace the product if product was found to have manufacturing defect.

APPLICATION CIRCUIT

You can see " A APPLICATION GUIDE TO ISOLATION TRANSMITTER"

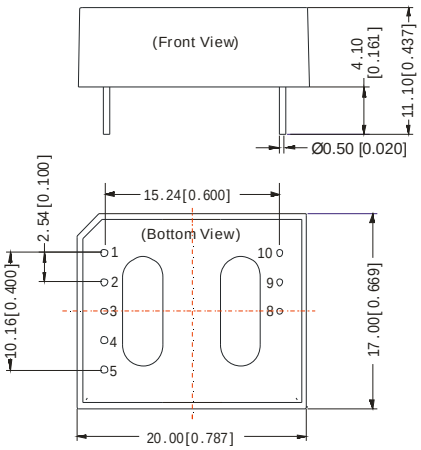
TYPICAL APPLICATIONS CIRCUIT DIAGRAM



MORNSUN

OUTLINE DIMENSIONS, RECOMMENDED FOOTPRINT & PACKAGING

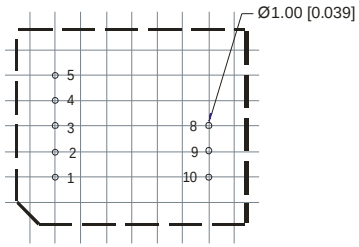
MECHANICAL DIMENSIONS



FOOTPRINT DETAILS		
Pin	Designation	Function
1	VCC	Input Power
2	GND	GND
3	TXD	TD_D485H Send Pin
4	RXD	TD_D485H Receiving Pin
5	CON	Send&Receiving Control Pin
6,7	NO PIN	
8	B	TD_D485HB Pin
9	A	TD_D485H A Pin
10	RGND	Isolation Power Output RGND

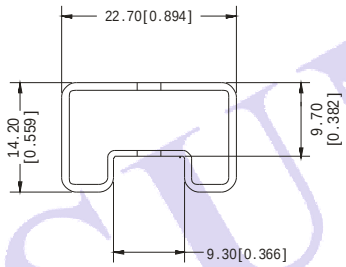
Note:
Unit:mm[inch]
Pin diameter tolerances: ±0.10mm[±0.004inch]
General tolerances: ±0.25mm[±0.010inch]

RECOMMENDED FOOTPRINT



Note: grid 2.54*2.54mm

TUBE OUTLINE DIMENSIONS



Note:
Unit :mm[inch]
General tolerances: ± 0.50mm[± 0.020inch]
L=530mm[20.866inch] Tube Quantity: 25pcs
L=220mm[8.661inch] Tube Quantity: 10pcs
Short tube inner packaging dimensions: L*W*H=255*170*80mm;
Short tube outer packaging dimensions(with six inner packaging boxes):
L*W*H=375*280*270mm;
Long tube inner packaging dimensions: L*W*H=580*200*100mm;
Long tube outer packaging dimensions(with two inner packaging boxes) :
L*W*H=600*215*220mm;
Long tube outer packaging dimensions(with three inner packaging boxes) :
L*W*H=600*215*325mm.

Note:

1. All specifications measured at Ta=25°C, humidity<75%, nominal input voltage and rated output load unless otherwise specified.
2. In this datasheet, all the test setup and methods are based on our corporate standards.
3. All characteristics are meant for listed model, non-standard models may perform differently, you can contact MORNSUN FAE for more details.
4. Contact us for your specific requirement.
5. Specifications are subject to change without prior notice.

MORNSUN Science & Technology Co.,Ltd.
Address: No. 5, Kehui St. 1, Kehui development center, Science Ave., Guangzhou Science City, Luogang district, Guangzhou,P.R.China.
Tel: 86-20-38601850
Fax:86-20-38601272
Http://www.mornsun-power.com